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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,686	06/20/2003	Joo-Hoon Lee	5000-1-307	6737
33942	7590	03/17/2004		EXAMINER
CHA & REITER, LLC				KALIVODA, CHRISTOPHER M
210 ROUTE 4 EAST STE 103				
PARAMUS, NJ 07652			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/600,686	LEE ET AL. <i>HL</i>
	Examiner	Art Unit
	Christopher M. Kalivoda	2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-6 is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 June 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Some examples are below.

- a. In Figure 1, there is no reference to 100-102 and 110.
- b. In Figure 2A/B/C/D, there is no reference to 210, 212, 230.
- c. In Figure 3, the reference signs are 300, 310, 320 ... However, the specification refers to these same steps using S300, S310, S320,... on page 7, line 7.
- d. In Figure 4A/B/C/D or 5A, there is no reference to 400-402, 411.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: There appears to be a typographical error on page 3, line 5. Reference sign 250 is used to refer to a "dummy mask" but later is used to refer to "shadow mask" in line 7. Appropriate correction is required.

***Allowable Subject Matter***

3. Claims 1-6 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter. Regarding independent claim1, a review of prior art failed to disclose or make obvious a method of fabricating planar light waveguide circuits, wherein the circuit includes a substrate comprised of core and under-clad layers, an optical circuit, and a plurality of arrayed waveguides coupled thereon, the method comprising layering a photoresist layer on a branch section of the optical circuit and the arrayed waveguides of the mask pattern and forming a vertical taper on the photoresist layer using a gray scale mask.

Claims 2-6 are allowed by virtue of their dependence upon claim 1.

5. This application is in condition for allowance except for the following formal matters: The specification contains a typographical error and numerous reference signs indicated on the drawings not mentioned in the specification.

6. Prosecution on the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11,453 O.G. 213. A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,697,552 to McGreer et al. describes a planar waveguide circuit with a core and under-clad layers, an optical circuit and an array of waveguides coupled thereon. U.S. Patent Application 2004/0005131 to Rantala et al. and U.S. Patent Application 2003/00044118 Zhou et al. describe using a gray scale masks to form a tapered waveguides. However, the references are silent with respect to layering a photoresist layer on a branch section of an optical circuit and the arrayed waveguides of the mask pattern and forming a vertical taper structure on the photoresist layer using a gray scale mask.

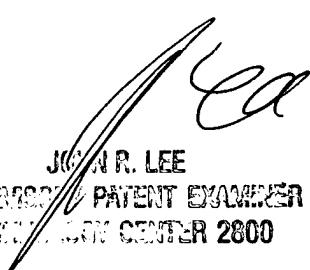
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2881

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk

  
JOHN R. LEE  
SUPERVISOR, PATENT EXAMINER  
TECH. 2881, ART CENTER 2800